WORK PERMIT # _____

ILR / Work Order # _____ **Dept.** _____ **Construction Job #** _____ **Tracking #** _____ **Account #** _____

1. Work requester fills out this section

Requester: MICHAEL LENZ Date: 8-3-98 Dept/Div/Group: PHENIX / EMCAL

Other Contact person (if different from requester): — Phone No. 5423

Start Date 8-5-98 Estimated End Date _____

Description of Work / Problem: LOAD 19.5 TONS EMCAL DETECTOR ONTO FLATBED AT 902 ANNEX FOR TRANSPORT TO BLDG 1008 (PHENIX EXP. HALL) AS PART OF PHENIX / RHIC EXPERIMENT.

Building 902 HB Room — Equipment RIGGING GEAR

2. Work requester, work provider, and ES&H (as necessary) jointly fill out this section or attach applicable hazard analysis

Hazard Analysis

RADIATION CONCERNS
[✓] NONE [ ] Activation [ ] Airborne [ ] Contamination [ ] Radiation [ ] OTHER _____
[ ] Special nuclear materials involved (ES&H 3.7.0), notify Group Leader, Isotope Special Materials Group (SSD)
[ ] Fissionable materials involved (ES&H 3.7.0), notify Laboratory Criticality Officer (DAT)

SAFETY CONCERNS

[ ] NONE	[ ] Corrosive	[ ] Flammable	[ ] Material Handling	[✓] Rigging/Critical Lift
[ ] Asbestos	[ ] Cryogenic	[ ] Fumes/Mist/Dust	[ ] Noise	[ ] Toxic
[ ] Biohazard	[ ] Electrical	[ ] Heat/Cold Stress	[ ] Non-ionizing Radiation	[ ] Vacuum
[ ] Chemicals	[ ] Elevated Work	[ ] Hydraulic	[ ] Oxygen Deficiency	[ ] OTHER _____
[ ] Confined Space	[ ] Excavation	[ ] Lasers	[ ] Penetrating Fire Wall	
[ ] Adding / Removing Walls or Roofs		[ ] Lead	[ ] Pneumatic	

ENVIRONMENTAL CONCERNS
[✓] NONE
[ ] Hazardous materials will be released to the air via a new/modified ventilation system, hood, or stack (ES&H 6.1.4 and 6.1.5) Notify Project Engineer, Environmental Protection Office (ES&H Services)
[ ] OTHER _____
[ ] New hazardous materials will be released via the liquid effluent system to the sewage treatment system or an impoundment (ES&H 6.1.2) Notify Regulatory Compliance Engineer, Environmental Protection Office (ES&H Services) for permit.

Waste Generated [✓] NONE [ ] Clean Waste [ ] Hazardous Waste [ ] Radioactive Waste [ ] Mixed Waste
Waste disposition by: —

Based on analysis above, the Review Team determines the job hazard category:

JOB HAZARD CATEGORY: ___MODERATE ___HIGH

Job Safety Analysis (JSA) Required? ___No ___Yes (Please attach)

Work Controls

WORK PRACTICES

[ ] NONE	[ ] Containment	[ ] IH Survey	[ ] Scaffolding - requires inspection	
[ ] Back-up Person/Watch	[ ] Exhaust Ventilation	[ ] Lockout/Tagout	[ ] Time Limitation	
[ ] Barricades	[ ] HP Coverage	[ ] Posting/Warning Signs	[X] OTHER USE LABRIGGERS	

PROTECTIVE EQUIPMENT

[ ] NONE	[ ] Ear Plugs	[ ] Gloves	[ ] Lab Coat	[ ] Safety Glasses	
[ ] Coveralls	[ ] Ear Muffs	[ ] Goggles	[ ] Respirator	[ ] Safety Harness	
[ ] Disposable Clothing	[ ] Face Shield	[X] Hard Hat	[ ] Rubbers	[X] Safety Shoes	[ ] OTHER _____

PERMITS REQUIRED *Initial next to box to show who has responsibility to generate the permit*

[ ] Confined Space Entry (ES&H 2.2.4)	[ ] Digging/Core Drilling(ES&H 1.18.0)	[ ] Impair Fire Protection Sys. (ES&H 4.2.0)
[ ] Cutting/Welding (ES&H 4.3.0)	[ ] Electrical Working Hot (ES&H 1.5.0)	[ ] Rad Work Permit (BNL RadCon Manual)
[ ] Dept/Div Specific Permit _____	[ ] Dept/Div Specific Permit _____	

DOSIMETRY/ MONITORING

[X] NONE	[ ] O_2/Combustible Gas	[ ] Self-reading Dosimeter	
[ ] Heat Stress Monitor	[ ] Passive Vapor Monitor	[ ] Sorbent Tube/Filter Pump	
[ ] Noise Survey/Dosimeter	[ ] Real Time Monitor	[ ] TLD	[ ] OTHER _____

Training Requirements (List below any location specific training requirements)
CRANE OPERATOR MUST HAVE CURRENT SAC CARD

3. Both work requester and work provider coordinate on work plan (use attachments for detailed plans)

Work Plan (procedures, timing, personnel, etc.): SEE ATTACHMENTS FOR DETAILS AND DRAWING

Special Working Conditions Required: _____

Operational Limits Imposed: _____

Post Work Testing Required: _____

Reviewed By: **Note: Primary facility reviewer will dictate the other required signatures*

Title	Name (print)	Signature	Life #	Date
Primary Reviewer	C. WILLIAMS J		14795	5-3-98
ES&H Services	STEVE KANE		19894	8/14/98
Other *	ALEX KOROL		21648	8/4/98

4. Job site personnel fills out this section

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements

Job Site Supervisor A. KOROL 21648 Contractor Supervisor _____

Workers:	Life #	Workers:	Life #
ERED LILCON	8463		
CHARLES EDWARDS	18466		

5. Work Requester or designee fills out this section

Conditions are Appropriate to Start Work: (Work permit has been reviewed, work controls are in place, and site is ready for job.)

Name _____ Signature _____ Life # _____ Date _____

6. Work Requester determines if Post Job Review is required

____YES ____NO

Post Job Review by ES&H Coordinator: _____ Life #: _____ Date: _____

	Name	Initial		
Other Closeout Signatures (as necessary):			Life #:	Date:
Other Closeout Signatures (as necessary):			Life #:	Date:

7. Worker provides feedback

Worker Feedback:

Supervisor: Is worker feedback required on this job? ___NO ___YES (attach feedback form)

Worker: Any feedback on safety concerns or on ways to improve the job? ___NO ___YES (ask for form if not attached)

PHENIX / EMCAL

Rigging Of Lead Scintillator Sectors Out Of 902 HB

The Lead Scintillator sectors for the Phenix Experiment weigh approximately 19.5 tons; with the addition of rigging equipment, the total lift comes in below the 902HB crane rating of 20 Tons.

Equipment

Two 6' wire ropes rated at 45 tons each, one ~~20'~~ 12' continuous nylon sling rated at ~~20~~ 10 tons (verticle), and appropriate shackles. Also required will be two trunnion brackets designed to prevent the wire ropes from slipping off the sector trunnions (these will be installed by EMCAL personnel).

Procedure

The maximum hook height of the 902HB crane and the lowest flatbed truck available determine the configuration of the rigging equipment (see Fig. #1).

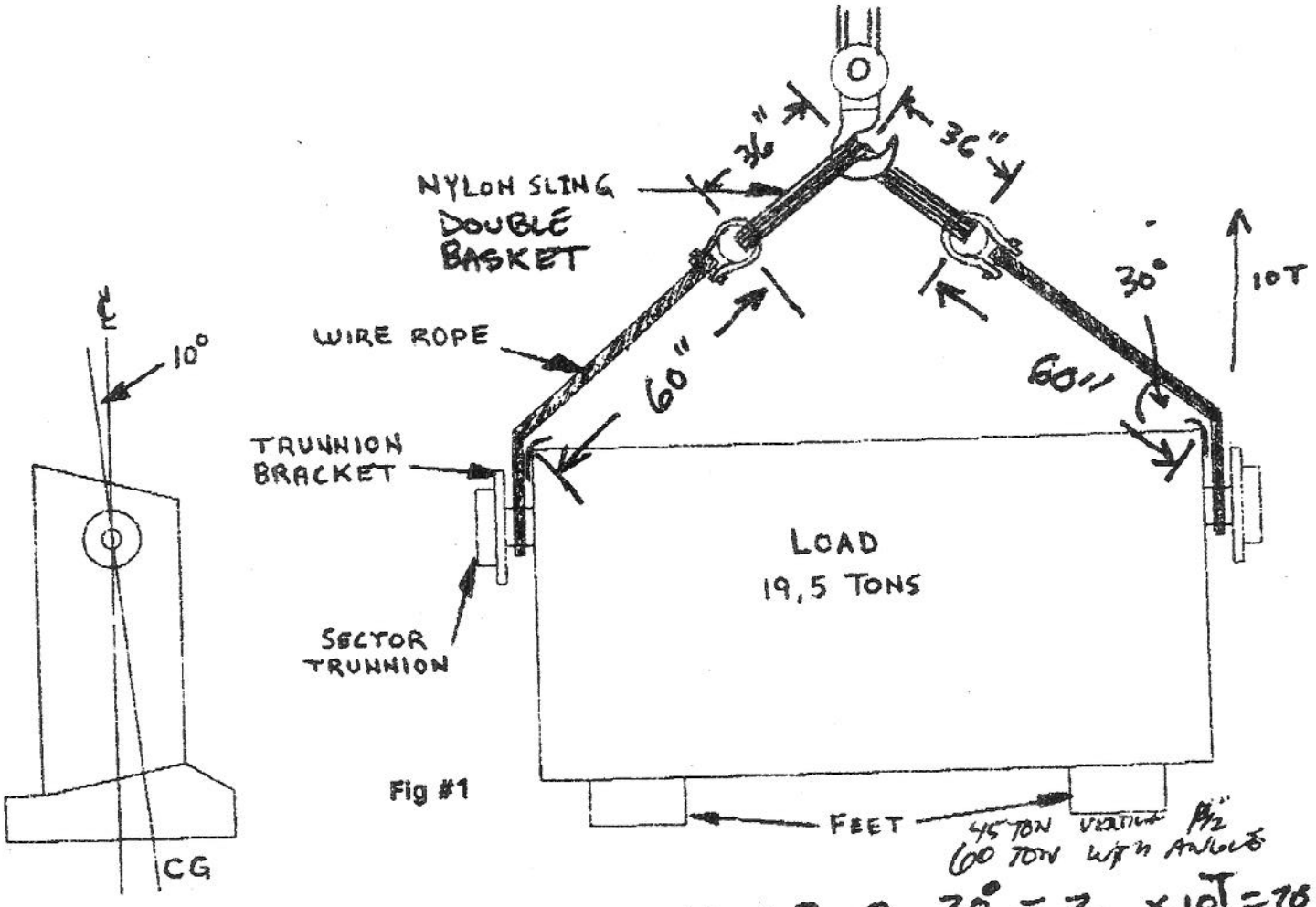

Fig #1

1) Attach the two trunnion brackets to the sector (done by EMCal tech.)
2) Install one wire rope on each upper trunnion (this may take some force to stretch wire rope loop over the trunnion bracket)
* 3) Double up the nylon sling and attach to remaining wire rope loops using appropriate sized shackles.
4) Ample chaffing material must be used to protect wire ropes from sharp edges of sector
5) A third shackle may be used at the hook if clearance of flatbed height allows.

Once the sector is placed on the flatbed (centered), it will be secured with standard rigging gear. The loads center of gravity is approximately 4' above the surface of the flatbed and is centered above the two 5' wide feet (which stay with the sector until final installation into the west carriage). It is recommended that the transport vehicle not see lateral inclines in the road in excess of 10 degrees (drivers discression).

* THE FLATBED OF CHOICE MEASURED 40" OFF 902 HB FLOOR [redacted] (MIN CLEARENCE HEIGHT), SLING LENGTH CHANGED TO ACCOMODATE MAX HOOK [redacted] HEIGHT AND FLATBED.

PHENIX / EMCAL

Rigging Of Lead Scintillator Sectors Out Of 902 HB

The Lead Scintillator sectors for the Phenix Experiment weigh approximately 19.5 tons; with the addition of rigging equipment, the total lift comes in below the 902HB crane rating of 20 Tons.

Equipment

Two 6' wire ropes rated at 45 tons each, two 3' continuous nylon sling rated at 25 tons min. (verticle), and appropriate shackles. Also required will be two trunnion brackets designed to prevent the wire ropes from slipping off the sector trunnions (these will be installed by EMCAL personnel).

Procedure

The maximum hook height of the 902HB crane and the lowest flatbed truck available determine the configuration of the rigging equipment (see Fig. #1).

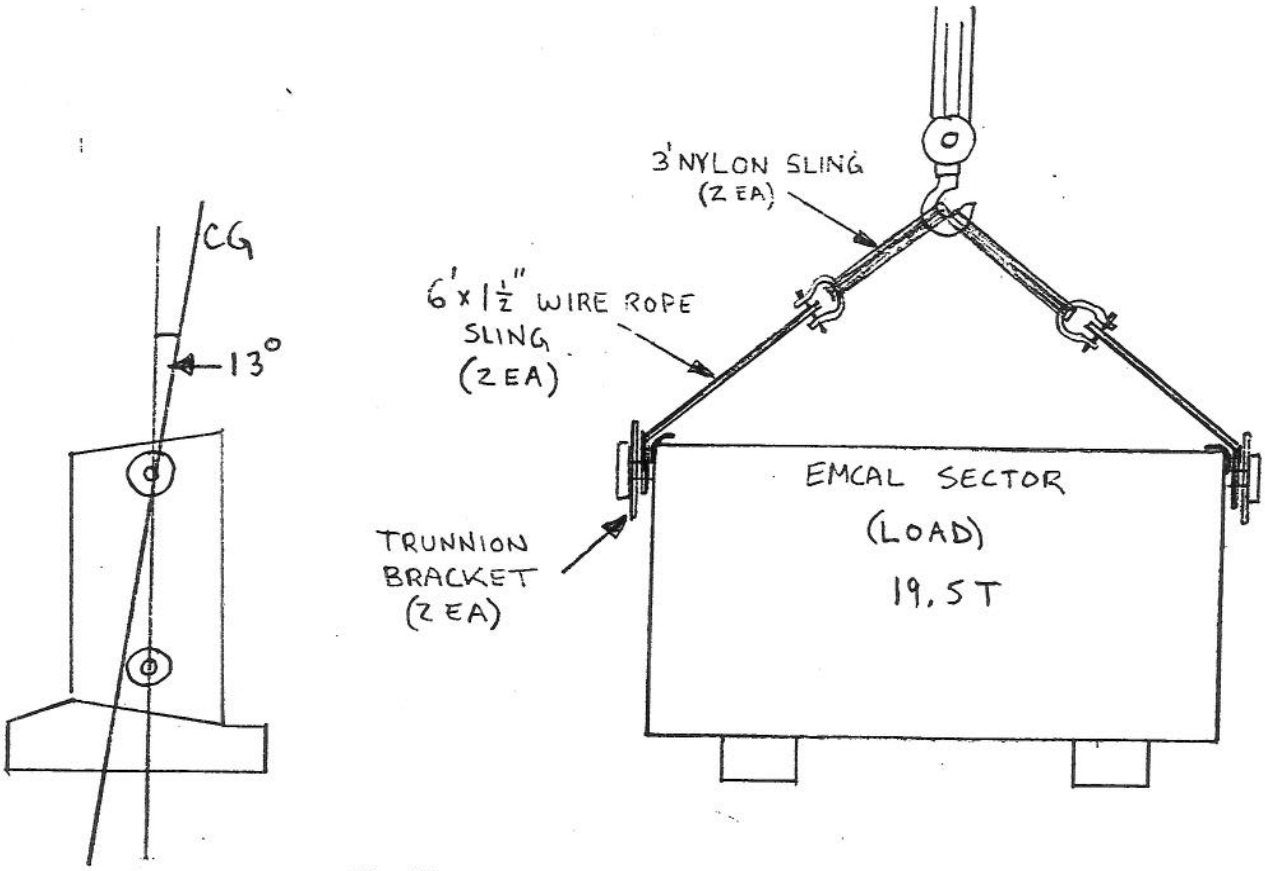

Fig #1

1) Attach the two trunnion brackets to the sector (done by EMCal tech.)
2) Install one wire rope on each upper trunnion (this may take some force to stretch wire rope loop over the trunnion bracket).
3) Hang the two 3' slings off the crane hook and attach those to the wire ropes (This should be done on the door side of the sector).
4) Lift the rigging gear into place being careful not to damage the two copper water lines protruding from the top back of the sector (door side).
5) Ample chaffing material must be used to protect wire ropes from sharp edges of sector.
6) The sector is then loaded on the flatbed.

Once the sector is placed on the flatbed (centered), it will be secured with standard rigging gear. The loads center of gravity is approximately 4' above the surface of the flatbed and is centered above the two 5' wide feet (which stay with the sector until final installation into the west carriage). It is recommended that the transport vehicle not see lateral inclines in the road in excess of 10 degrees (drivers discression).